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Michael David Draper

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TAYLOR & AUST, P.C.
P.O. Box 560
142. S Main Street
Avilla, IN 46710

EXAMINER

LIGHTFOOT, ELENA TSOY

ART UNIT

PAPER NUMBER

1792

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,421	Applicant(s) DRAPER, MICHAEL DAVID	
	Examiner ELENA Tsoy LIGHTFOOT	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 8-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Applicant's election without traverse of A(i), claims 1, 3-17; B(b), claim 8; D(b) in the reply filed on 12/10/2009 is acknowledged.

Status of the Claims

Claims 1-17 are pending in the application. Claims 2, 7, are withdrawn from consideration as directed to a non-elected invention.

Claims examined on the merits are 1, 3-6, and 8-17.

Title of the Invention

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "A method of making an industrial fabric".

Specification

The following guidelines illustrate the **preferred layout** for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.

- (1) Field of the Invention.
- (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

- 3. Claims 11, 16 and 17 are objected to because of the following informalities: "US radiation" should be changed to "UV radiation". Appropriate correction is required.
- 4. Claim 1 is objected to because of the following informalities: "Method" should be changed to "A method". Appropriate correction is required.
- 5. Claims 3-6, and 8-17 are objected to because of the following informalities: "Method" should be changed to "The method". Appropriate correction is required.
- 6. Claim 13 is objected to because of the following informalities: "**of1-** Hydroxyl cyclohexyl phenyl ketone" should be changed to "of 1-hydroxyl cyclohexyl phenyl ketone". Appropriate correction is required.
- 7. Claim 13 is objected to because of the following informalities: "**oc** hydroxy ketone (AHK)" should be changed to "**or** alpha-hydroxy ketone (AHK)". Appropriate correction is required.

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8. Claims 12 and 15 are objected to because of the following informalities: "pm" of claim 12 and "um" of claim 15 should be changed to "micron(s)" for clearer understanding. Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Drying off the liquid to result in pin holes forming in the coating layer during the heating and melting stage that will form small pores in the coated fabric surface is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 1, 3-6, and 8-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said coating layer" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Claim 5 recites a limitation “wherein the unsaturated groups contain at least one of acrylate, methacrylate, vinyl ether, maleimide and at least one of epoxide, maleic and fumaric double bond” which is confusing because epoxide is not an unsaturated group but (CH₂)₂O group. For examining purposes the phrase was interpreted as “wherein the unsaturated groups contain at least one of acrylate, methacrylate, vinyl ether, maleimide and at least one of ~~epoxide~~, maleic and fumaric double bond”.

Claim 8 recites a limitation “wherein a porous layer is achieved by applying a thin layer and/or by first wetting the surface of said fabric with a liquid before applying the powder onto said surface” which renders the claim indefinite because it is not clear whether a porous layer is formed in addition to powder coating layer or not.

Regarding claim 13, the phrase “and the like” renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by “and the like”), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Claim 16 recites “UV radiation in the range from 10nm to **1000nm**”, which is confusing because generally radiation over 450nm is considered to be radiation of **visible** light*.

13. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: wherein the coating layer is porous, and the porous layer is achieved by drying off the liquid to result in pin holes forming in the

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coating layer during the heating and melting stage that will form small pores in the coated fabric surface.

14. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: wherein the coated layer is porous, and the porous layer is achieved by applying a thin coating layer of a liquid and/or by first wetting the surface of said fabric with a liquid before applying the powder onto said surface, then drying off the liquid to result in pin holes forming in the coated layer during the heating and melting stage that will form small pores in the coated fabric surface.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

17. Claims 1, 3-6, and 9-17 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Moens et al (WO03010248).

Examiner Note: for convenience, instead of WO03010248, the Examiner will refer to US 6,995,194 of the same family.

Moens et al discloses a method for applying coating with improved chemical resistance and flexibility (See Abstract) to various substrates such as paper, **textile** (claimed industrial fabric) (See column 10, lines 3-10) comprising the following steps:

- applying a radiation-curable powder onto the surface of the substrate,
- melting and spreading the powder particles to form a smooth, uniform and continuous coating at the surface of the substrate,
- directing UV radiation at the molten coating so as to cure the coating. (See column 9, lines 51-60).

As to claim 3, the powder comprises polymeric particles (See Abstract).

As to claims 4-5, the powder comprises a mixture of (meth)acryloyl group containing resins (claimed solid polymer resin containing unsaturated groups) (See Abstract), wherein one (meth)acryloyl group containing resins contains maleic double bond (See column 7, lines 1-6).

As to claims 6 and 13, photo-curing of the powder composition, the presence of at least one photo-initiator is essential (See column 8, lines 15-19). Suitable photo-initiators include hydroxyl cyclohexyl phenyl ketone (See column 8, line 31).

As to claim 9, the powder composition can be applied by electrostatic spraying (See column 9, lines 49-50).

As to claims 10, 14 and 15, the powder composition is melted by IR radiation of infrared lamps to 80-150⁰C (See column 9, lines 52-53), e.g. to **140⁰C** (See column 12, lines 53-54). It is the Examiner's position that IR radiation of the infrared lamps capable of heating a coating to 80-150⁰C is in the claimed range.

As to claims 16 and 17, UV light is emitted, for example, by medium pressure mercury vapour UV radiators, of preferably at least 80 to 250 W/linear cm, or by any other well-known source of the state of the art (See column 9, lines 57-62). It is the Examiner's position that UV radiation emitted by medium pressure mercury vapour UV radiators is in the claimed range.

18. Claims 12, and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moens et al '248.

As to claim 12, coating thickness can be in the range of **40-100 microns** (See column 12, lines 50-51) which overlaps claimed range of **60-150 microns**. It is well settled that overlapping ranges are prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Moens et al's range that corresponds to the claimed range.

As to claims 14 and 15, the powder composition is melted by IR radiation of infrared lamps to **80-150⁰C** (See column 9, lines 52-53) which overlaps claimed range of **100-150⁰C**. It would have been obvious to one having ordinary skill in the art to have selected the portion of Moens et al's range that corresponds to the claimed range.

As to claim 15, it is well known in the art that IR radiation of the infrared lamps capable of heating a coating to 80-150⁰C is in the claimed range*.

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As to claims 16-17, it is well known in the art that UV radiation emitted by medium pressure mercury vapour UV radiators is within the claimed range**.

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

* Nagai (US 4358490) is cited here to show that "visible light" has a wave length of 0.4 - 0.7 microns; a "heat ray" which is an **infrared** ray has a wave length ranging from **0.7 microns -1 mm**. (See column 2, lines 1-4).

** Dodge et al (**US 5592325**) is cited here to show that it is well understood by those of ordinary skill in a number of arts, the electromagnetic spectrum covers a wide range of energy, and the visible spectrum generally refers to light having a wavelength of between about 400 nanometers (nm) and 750 nm. Infrared light tends to have a longer wavelength than light in the visible spectrum (i.e., more than 750 nm), and ultraviolet light tends to have a shorter wavelength (i.e., less than 400 nm). As is further known to those of ordinary skill in many arts, wavelength is inversely proportional to the frequency of the wave, and frequency is directly proportional to the energy of the event producing the wave. Thus, longer wavelengths represent lower energy transitions, while shorter wavelengths represent higher energy transitions. See column 1, lines 48-64. Malinouskas (**US 5865733**) is cited here to show that the optical sources may comprise, for example, light-emitting diodes (LEDs) which emit in the infrared radiation band. The optical spectrum is generally considered to have three bands, namely the ultraviolet band, which includes wavelengths of 10-390 nanometers (nm), the visible

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band, which includes wavelengths of 390-760 nm, and the infrared band, which includes wavelengths of 760 nm to 1 millimeter (mm). See column 5, lines 52-57.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELENA Tsoy LIGHTFOOT whose telephone number is (571)272-1429. The examiner can normally be reached on Monday-Friday, 9:00AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elena Tsoy Lightfoot, Ph.D.
Primary Examiner
Art Unit 1792

January 5, 2010

/Elena Tsoy Lightfoot/